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ABSTRACT

Psychometric test and the Uzgiris-Hunt Scale I (the Development of Visual Pursuit and the Permanence of Objects) were administered to mentally retarded preschoolers (N=105), school aged children (N=35), and adolescents (N=8), all functioning in the sensorimotor stage of development. Performances for each group are reported, and parent reactions are cited. The Piagetian framework gave parents an explanation of their child's functioning level and the inconsistencies in their child's development. Results for school aged Ss showed a significant weakness in representation and strength in learning based on repetition, imitation, and recognition. Behavior management problems are cited with adolescent Ss, and the authors suggest that for this group, an institution might be a least restrictive environment. (CL)

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BEHAVIORAL AND MANAGEMENT PROBLEMS OF MENTALLY RETARDED FUNCTIONING WITHIN THE SENSORI-MOTOR STAGE

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The sensori-motor stage is considered, by Piaget, as a stage of practical intelligence. It is a first stage and basic for further cognitive development (Piaget 1976, 1963, 1971; Piaget & Inhelder 1969). In this stage problems are solved by motor actions as responses to sensori stimuli without the intervention of representation or thought. The normal child progresses within the sensori-motor stage from birth till about two years.

Piaget states "During stages one to five of sensori-motor imitation there are no mental images. In stage six of this period, imaged representation makes its appearance" (Piaget 1962). When external stimuli can be internalized, the representation and thinking process starts to develop as necessary structures for meaningful language acquisition. For better understanding of young mentally retarded children or older functioning within the sensori-motor stage, in addition to the usual psychometric evaluation, the Uzgiris-Hunt Scale I - The Development of Visual Pursuit and the Permanence of Objects was chosen as easily applicable, scorable and representative of Piagetian sequential development of the object concept and in the last stage the appearance of internal representation. Psychometric tests lack a developmental approach and insight into the qualitative changes between stages as well as the sequential aspect characteristic for a Piagetian approach which can be meaningfully used in

guidance and remediation planning. According to Inhelder (1968) the idiot (profoundly and severely retarded) never outgrow the sensori-motor, prelinguistic stage.

We will concentrate on mentally retarded functioning within the sensori-motor stage.

The retarded presented are divided in three groups by chronological age: preschoolers 2-6 years, school age 6-12 years and adolescents 12-15 years. Parent's concerns and expectations reflect, to some degree, normal progression through stages. Preschoolers' parents main concern was lack of language development which corresponds to lack of reaching the preoperational stage. At the beginning of public school, although seen in CERC, the mentally retarded were functioning within the sensori-motor stage and still their parents expressed their concern in terms of learning problems which corresponds to the concrete operations stage. For adolescents functioning within sensori-motor stage parent's usual concern was expressed in terms of worries about the future, behavioral maladjustment and dependency. Normal adolescents should reach the formal operations stage at that age. All retarded seen were living in the community with their family and a few were in foster care. All were ambulatory and without significant sensori or motor handicaps. All were diagnosed as mainly mentally retarded.

Preschool Age

First we will concentrate on the preschool age group. One hundred five children of preschool age were seen with a mean CA 3y 5mo. They were given the Griffiths Mental Development Scales (Griffiths 1970) and Uzgiris-Hunt Scale I, The Development of Visual Pursuit and the Permanence of Object (Uzgiris-Hunt 1975).

Table 1 shows the highest sequential step achieved in relation to the level of retardation.

Of 22 profoundly and severely retarded, none achieved the last steps. The range was from the 3rd step to the 10th step corresponding to an approximate age range of 4-5 months to 13 months. The chronological age of those children was 27-67 months with mean CA 46 months.

On the Griffiths their mean MA was 12.5 months (7-21 mo) and their mean LA was 8.6 months (4-16 mo). Achievement on the Uzgiris-Hunt Scale I placed them within the Piagetian sensori-motor stages 3, 4 or 5. Frequently observed hand movements or repetitive play activity with throwing objects may be explained in terms of circular reactions as stated by Woodward (1959) rather than emotional disturbance. Some of the children showed recognition of their mother and apprehension about separation. As stated by Pulaski (1978), the mother is the most stimulating object to the child. The same children were unable to look persistently for a hidden toy. Uzgiris-Hunt Object Permanence

step 14 was reached by moderately retarded at a mean CA 51 months; mildly retarded at a mean CA 42 months and borderline at a mean CA 37 months. In general, when they were able to reach the 14th step in Griffiths, the mean MA was 29 months and the mean LA was 25 months. The finding of Jedrysek & Soles (1979) that object permanence correlates with language age rather than with general "mental age" on the Griffiths Scales, is in keeping with research of Kahn (1975) and Woodward (1959) of predictive value of the sensori-motor stage 6 for language development.

Management problems were frequently reported by parents of preschool children functioning in the sensori-motor stage. The problems were often related to the confusion that resulted for parents when a child progressed in physical maturation and motor development, as generally expected, but remained within the sensori-motor stage of intellectual functioning for a prolonged period of time.

As expected for all parents, the parents of our preschool children had internalized the norms for typical child development. These norms were then projected upon the child as role expectations. The norms also provided guidelines for parent's own behavior when interacting with their child. Ordinarily these expectations could be fulfilled by the average child and parent's methods of interacting would be satisfactory while they nurtured, played with, trained and disciplined their child. Problems resulted,

however, for parents of a retarded child when expectations for the child were unfulfilled or by parents own methods of coping did not produce desired or expected results. Parents became frustrated, disappointed, angry and worried. As reported by Tavormina et al (1976), many of the problems were experienced by parents of normal children but perhaps at different ages.

Examination of common assumptions held by parents helped to clarify the basis for some of the management problems and also helped to specify the types of interventions to use. Two contradictory assumptions were often juxtaposed for parents:

1. It was assumed that learning involved discrete skills. Therefore, deficiency in one area did not imply deficiency in other areas. The implication was that the child would be all right if a specific symptom such as lack of language were remediated.

2. It was assumed, however, that if a child was progressing in some areas, ie. motor development and physical maturation, then the child was capable of commensurate development in all areas.

All parents assumed their preschool child would develop language. Lack of language was often attributed to personality traits, such as shyness, or a tendency to withhold. The ability to occasionally say a word, to name objects, or to repeat words was usually regarded as evidence for the fact the child was capable of verbal communication. A good memory, rote learning, the adjusting to familiar situations, imitating mother's household

activities and expressing wants by pointing or pulling were all frequently cited as testimony of the child's brightness and ability to comprehend. The child's lack of response to spoken commands and a tendency to do things sometimes and not others were often viewed as expressions of stubbornness and willful disobedience. Most parents assumed their child understood verbal communcation. All of these assumptions led to an over estimation of a child's ability. However, it was also common for parents simultaneously to underestimate the capabilities of the preschool retarded child who functioned in the sensori-motor stage. This tendency was sometimes evident in lack of achievement in self-care skills and lack of a routine for the child. Underachievement was also related to the parents' lack of information about effective methods for training their child.

Frequently parents of the preschool child were highly motivated to obtain help for their child. Often they were willing to participate in programs themselves.

A new framework utilizing Piagetian concepts offered parents an explanation of their child's level of functioning and the inconsistencies in their child's development. Within this framework it was possible to:

1. recognize the parents' assumptions, and
2. provide other interpretations of their child's behavior and to identify different coping techniques for effective

interaction with their child.

The similarities and differences between the development of retarded and normal children were described. Similarities include the following:

1. The sequence of development is the same for all children in the areas of language and cognitive functioning.

2. All children can learn within their level of functioning.

3. Motor, language and cognitive development are interrelated.

Differences in the development of normal and retarded children include:

1. A slower rate of development

2. A discrepancy between motor development and cognitive development.

3. Hesitancy, a tendency to regress and inconsistency in performing acquired skills.

The latter traits were observed by Inhelder (1968) in the retarded and described by the concept of viscosity.

School Age

Thirty five school age children functioning within the range of severe and profound mental retardation were tested with the Cattell (1970), Stanford Binet (Terman 1962, Thorndike 1973) or Griffiths (1970) tests. Twelve children were tested for diagnostic and school placement purposes and 23 were tested because of difficulties in school adjustment or other behavior problems. The age range was 6yr - 11yr11mo with mean CA 7yr7mo. At school age only, Uzgiris-Hunt step 14 was given. Of 11 profoundly retarded, only one was able to pass it and of 24 severely retarded, 11 passed it. The table 2 gives the general overview on the functioning of the school age, severely and profoundly retarded tested in our Clinic.

Although 12 children who passed step 14 were also as able to pass some simple verbal tests, they used single words for naming or a holophase to express their needs. None of the 35 children was able to answer questions, identify objects by use or define by use. Some were reported to use some words but would not respond to picture vocabulary showing a deficit in communication (Blank 1978). "There is an initial difference that should not be lost between children spontaneously using a word such as "ball" and using the same word in response to a question such as, what is this. In the former situation the children are using their language when and where they like. In the latter situation,

although the same verbal and perceptual skills were involved, there is the additional component of communication. The children are now willing and able to call on their intellectual skills to mesh with the mind of another person." Severely and profoundly retarded children who achieve stage 6 on the Piagetian Scale, had minimal communicative language. Their speech consisted of conditioned associative words and a very limited vocabulary not comparable to normal children of a similar mental age (Moskowitz Nov. 1978). The psychometric test pattern suggested the significant weakness in representation and strength in learning that was based on repetition, imitation and recognition. Table 3 shows items which retarded children were prone to fail and prone to pass.

The significance of perceptual training and conditioning, which are often stressed for cognitive progress, is questionable and needs more investigation. As Piaget (1969) points out: "Perception is dependent upon the presence of the object and perceptual knowledge is limited to certain physical characteristics" and children functioning within sensori-motor stage achieve performance items even in the absence of achievement suggesting presence of representation or symbolic functions.

Restlessness, repetitive activities and acting out in reaction to frustration were main problems in addition to the lack of progress expected by parents when a child is attending

school. Children's progress from the age of about 5-6 years until they were retested, was so minimal that fixation and deceleration considered by Inhelder (1968) as characteristic for mentally retarded seemed present. A plateau seems to occur at about CA 6-8 years for retarded functioning within the sensori-motor stage, but more systematic investigation seems necessary.

Children who continue to function in the sensori-motor stage by school age will not outgrow the sensori-motor stage. Their delayed development is clearly evident and the severity is identified. It becomes obvious that the child cannot use language. They appear dull and stigmatized.

Parents usually assume they will always care for their child. They continue to maintain some normal expectations. Parents emphasize the importance of school and the opportunity to learn. Hopes for progress are sometimes raised by fulfilling the social norm of going to school. Some parents think their child will advance if only they get into the right class with the right teacher. Parents are usually relieved to have their child in a full day program and direct parental involvement decreases. Parents came to our Clinic with their school age child for several reasons: ie, lack of expected progress in school, behavior problems, tantrums, regression due to changes in the environment such as the family moving or a change of school. There were also complaints about inappropriate behavior such as constant eating,

rocking, masturbating or other repetitive activities related to the child's stage of functioning. Self-help skills that were achieved by some included dressing with simple clothing that does not involve buttoning or tying. Some assistance was now required in self-help skills established in the preschool years because they were not up to parents' standards for a child of school age. Behavior problems include: aimless wandering, lack of awareness of danger and acting out in response to frustration through regression or aggression, and the need for constant supervision. It was very demanding on parents to keep their child occupied, as children in the SM stage are unable to provide self-direction at any age. They require supervision for activities and for safety. Guidance is necessary for all self-help skills. By this age the child spends most of the time in school, at home or with close relatives. They are taken out very little due to the embarrassment and the amount of supervision required.

Adolescents

Only 8 profoundly and severely mentally retarded adolescents with a mean CA 13.6y and age range 12y2mo - 14y11mo were seen. At this stage few profoundly and severely retarded without additional handicapping conditions come for psychological evaluation. They came only in relation to behavioral problems. As summarized on Table 4, of this group, the mean MA was 34.0 months (16.4mos - 46 mos) and the mean SA as tested by the Vineland was 3.53y (1.5Y - 4.9y). In this group three adolescents sid not look for a hidden toy, failing the 14th step of the Uzgiris-Hunt Scale.

Table 3 shows items easy and difficult for their group. Two of the severely retarded were able to point to objects described in terms of use or to follow simple verbal commands as expected for about a 2½ year level. Three subjects were not using language at all, and all 8 adolescents, including two mentioned above, were using only single words, had limited communicative ability and lacked the ability to use symbolic play and deficits in functioning as analyzed by Inhelder (1976). Only one retarded was not toilet trained, but constant need for care, lack of independence and a tendency to acting out presented serious problems. One retarded child showed more "autistic features" which could be explained, as stressed by Woodward (1959), as "circular reactions" type of behavior. With growing age, the discrepancy between age expectations for normal adolescents and severely and profoundly retarded is so striking and difficult to

accept, that in six out of eight instances, the parents considered institutionalization. One was deinstitutionalized and placed in foster care with difficulties and consideration of return to an institution.

By the time of adolescence, complaints about odd and maladjusted behavior are stressed by parents. Some management problems result from the adolescent's relatively good physical development, sexual maturation and cognitive functioning that is still within the sensori-motor stage. Behavior such as rocking, masturbating, hitting, throwing objects, becomes socially intolerable and frightening due to their increased size and strength. At this stage we found parents uninterested in participating in programs of behavior modification and conditioning which could be helpful. Many parents had made extensive efforts in earlier years with minimal results and they were in search of relief. In some instances full time day programs alleviated the stress.

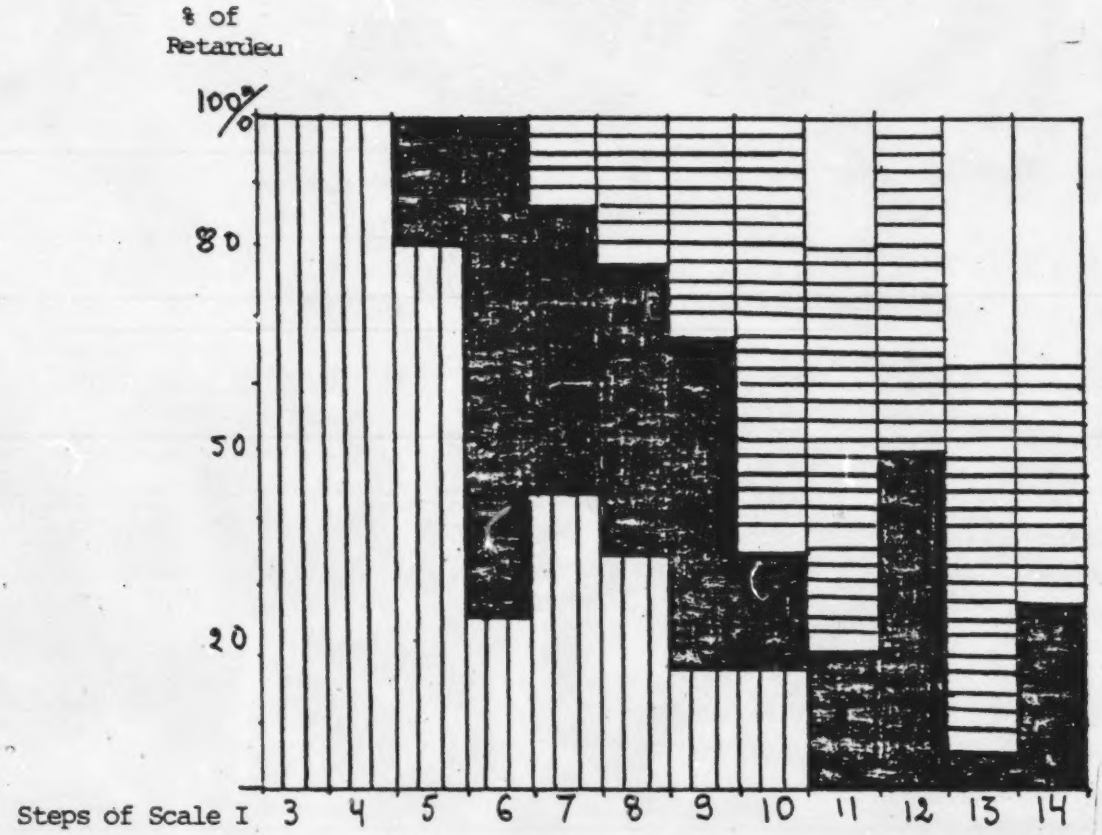
Parents realized their child would always be dependent and they worried about the future. They considered alternate plans for care. Parents wanted to provide for their child's security and well being. They were interested in interventions that did not require parental involvement. Siblings usually had their own interests and responsibilities and were not available to take over for their parents. As Piaget states (Piaget 1971 p.406)

"It is....no exaggeration to say that sensori-motor intelligence is limited to desiring success or practical adaptation, whereas the function of verbal or conceptual thought is to know and state truths". For human community verbal communication is normal expectation and seems crucial for social adjustment. For older profoundly and severely retarded an institution might be a least restrictive environment.

TABLE 1

Object Permanence Scale I
Uzgiris-Hunt

Highest Sequential Step Achieved in Relation to the Level of Retardation



		Number	
▥	Profound & Severe MR	(22)	mean CA 46 mos. (27-67 mos) Steps: 3-10
■	Moderate MR	(29)	mean CA 42 mos. (24-69 mos) Steps: 5-14
▤	Mild MR	(35)	mean CA 37 mos. (27-57 mos) Steps: 7-14
□	Borderline Intelligence	(19)	mean CA 36 mos. (26047 mos) Steps: 11,13,14
	TOTAL	105	

Achievement of Step 14 Object Permanence Sc.I of Uzgiris-Hunt

Profound & Severe MR		none	
Moderate MR	(9)	mean CA=51 mos. (48-69 mos)	mean MA 29 mos.
Mild MR	(11)	mean CA=42 mos. (39-57 mos)	mean LA 25 mos.
Borderline	(12)	mean CA=37 mos. (30-47 mos)	

TABLE 2

Uzgiris Hunt Scale I Object Permanence
Step 14

	Pass	Fail	
Severe MR	11	13	24
Profound MR	1	10	11
	12	23	35

Age Group 6y0 - 11y11mos.

Severe MR	CA mean 7y10mos.	range 72-141 months
	MA mean 27.5 mos.	range 13-37 months
(Vineland)	SA 2.8y	range 1.41-4.50y
Profound MR	CA mean 7y5mos.	range 72-128 months
	MA mean 14.9 mos.	range 8.6-24 months
(Vineland)	SA mean 1.80y	range 1.01-2.80y

TABLE 3

Age Group 6.0 - 15 yrs.

Table of Test Items

Easy (Prone to Pass)	Difficult (Prone to Fail)
Gets visible toy. Pulls cloth to get toy Overcomes glass frustration	Finds toy under cup Unwraps and finds toy Finds hidden toy (choice: time delay)
Imitates tower building (4 to 12 blocks)	Train of 3-4 blocks Block building bridge
Imitates lines, circular scribble or circle	Copies lines and circle
Simple form board One by one matching	Rotated form board
Names objects Picture vocabulary	Identifies objects by use Defines by use Responds to pictures (spontaneous naming)
Identifies parts of body	Obeys simple verbal commands
Matching pictures, forms, colors	Picture memory Naming hidden objects
Meaningful use of objects Practice play	Symbolic play Make-believe-representation of absent object

TABLE 4

8 Adolescents 12 yrs. - 14yllmos.

Severe and Profound MR	CA mean 13 yrs.6 mos.	(12y2mo.-14yllmo.)
	MA mean 34.0 mos.	(16.4mos-46mos.)
	SA mean 3.53 yrs.	(1.5 - 4.9 yrs.)

Step 14 of Object Permanence Uzgiris-Hunt Scale I

	Pass 14	Fail 14	Total
Severe & Profound MR	5	3	8

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